

**16-Slot  
Media Converter Chassis  
Installation Guide**

**MCC-16  
MCC-16R  
MCC-16M  
MCC-16RM**

Revision A

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EN 55022: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment.

EN 50082/1: Generic Immunity Standard -Part 1: Domestic Commercial and Light Industry.

EN 60555-2: Disturbances in supply systems caused by household appliances and similar electrical equipment - Part 2: Harmonics.

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# Chapter 1

## Introduction

The Model MCC-16 Series Modular Converter System is a manageable media converter chassis that provides 16 slots for up to 16 10/100 Ethernet network Media Converters (MC). A wide range of media converters is available depending on your variety of network cabling environment. These optional media converters include 10/100 UTP to multimode or single mode fiber cable.

The chassis unit provides a centered power supply to the converter modules and serves as a converter center and wiring concentrator.



For specifications of the optional media converters please refer to the associated installation guides respectively.

## 1.1 Features

Some of the key features include:

- Managed Media Converter Center Chassis
- 19-inch rack-mountable 2U chassis
- Managed system accommodates up to 16 media converters
- Highly modularized chassis design with
  - modular media converters
  - modular management module
  - two system power modules for power redundancy
- Provides high availability and maintainability
- Power backup feature with two power chassis
- Visible system status indication
- Supports in-band Telnet, SNMP and web-based management
- Supports out-of-band direct console management
- Management from anywhere and any platform using a web browser
- Easy-to-use point and click user interface
- Photographic quality interface to configure and monitor the system
- Supports in-band event SNMP trap report
- TFTP Software Upgrade

## 1.2 Technical Specifications

<b><u>Model</u></b>	<b><u>MCC-16</u></b>	<b><u>MCC-16R</u></b>	<b><u>MCC-16M</u></b>	<b><u>MCC-16MR</u></b>
19-inch Rack Mount	Yes	Yes	Yes	Yes
Management	No	No	Yes	Yes
Number of MC Slots	16	16	16	16
Number of Power Slots	2	2	2	2
Plug-in Power Modules	1	2	1	2
Module Type	AC	AC	AC	AC
Input voltage	90 ~ 264V	90 ~ 264V	90 ~ 264V	90 ~ 264V
Power Supply Rating	60W	60W	60W	60W
Cooling	DC Fan	DC Fan	DC Fan	DC Fan

### **Mechanical**

Chassis Height (2U)	3.47 in. (88mm)	3.47 in. (88mm)	3.47 in. (88mm)	3.47 in. (88mm)
Width	17.45 in. (443mm)	17.45 in. (443mm)	17.45 in. (443mm)	17.45 in. (443mm)
Depth	11.82 in. (300mm)	11.82 in. (300mm)	11.82 in. (300mm)	11.82 in. (300mm)
Weight (no MC installed)	11.9 lbs (5.4 kg)	13.2 lbs (6.0 kg)	12.1 lbs (5.5 kg)	13.4 lbs (6.1 kg)

### **Common Specifications**

#### **Environmental**

Operating temperature	0 ~ 40°C
Storage temperature	-20 ~ 75°C
Operating humidity	10 ~ 90%RH

#### **Emission standard**

Conducted emission	EN55022, CISPR 22
Radiated emission	EN55022, CISPR 22
Voltage harmonics	EN61000-3-2
Voltage fluctuation & flicker	EN61000-3-3

#### **Susceptibility**

Electrostatic discharge immunity	EN61000-4-2, IEC61000-4-2
Radiated immunity	EN61000-4-3, IEC61000-4-3
EFT/Burst immunity	EN61000-4-4, IEC61000-4-4
Surge immunity	EN61000-4-5, IEC61000-4-5
Continuous wave voltage immunity	EN61000-4-6, IEC61000-4-6
PFMF immunity	EN61000-4-8, IEC61000-4-8
Voltage DIP/Interrupt immunity	EN61000-4-11, IEC61000-4-11

#### **Certifications**

FCC	Part 15, Class A
CE	EMC Class A, EN50081-1, EN50082-1

### **AC Power Chassis Module Specifications**

Dimension	7.64 in. (194mm) x 6.15 in. (156mm) x 1.59 in. (40.3mm)
Installation method	Plug in to system rear panel
Maintenance	Modular design for easy maintenance
AC power switch	System power on/off switch
AC power receptacle	IEC320 type receptacle
Power status indication	Green LED Electric
Input voltage rating	100 ~ 240VAC
Input voltage range	90 ~ 264VAC
Input frequency	47 ~ 63Hz
Input surge current	20A max. @115VAC
Efficiency	75% @ 115VAC full load
Output power	60W
Over current protection	All output with short circuit protection
Safety	UL / cUL, TUV EN60950
Insulation Resistance	>10M Ohm @ DC500V
Dielectric withstands	1500VAC 10mA 1min.

### **Management Module Specifications**

Dimension	4.22 in. (107mm) x 0.95 in. (24mm) x 3.40 in. (86.4mm)
Slot position	Slot 0
CPU	RISC-based ARM7
RAM size	1M bytes
Flash size	512K bytes

#### **System interface**

Connector	FutureBus connector
-----------	---------------------

#### **Console interface**

Interface	RS-232 DTE
Connector	9-pin male D-SUB connector
Baud rate	38400, N, 8, 1, 0
Flow control	Disabled

#### **In-band interface**

Interface	10/100M LAN port
Connector	Shielded RJ-45 MDI
Standard	IEEE 802.3 10BASE-T/100BASE-TX
Auto-negotiation	Support

#### **LED Indicators**

P1, P2	Green LED, power module status
DIAG	Green LED, CPU initialization
FAN	Green LED, Fan failure indication
CONSOLE	Green LED, Console RS-232 Rx activities
LNK/ACT.	Green LED, LAN port link and activities status



## **Management Specifications**

### **Management Interface**

Telnet	Via direct RS-232 console connection
Telnet	Via TCP/IP Telnet software
SNMP agent	Via TCP/IP SNMP manager software
HTTP server	Via web browser software

### **Protocols**

IPv4	IP version4	RFC791
TCP	Transmission Control Protocol	RFC793
UDP	User Datagram Protocol	RFC768
ICMP	Internet Control Message Protocol	RFC792
SNMP	SNMP agent v1	RFC1157
MIB-II	Standard MIB	RFC1213
TFTP	Trivial File Transfer Protocol	RFC1350
TELNET	Telnet protocol	RFC854
HTTP	HTTP server for web management	RFC1945

### **Management Objects**

Password for access control	Set and monitor
System status: CPU, memory, flash, software	Monitor
System power 1&2 status	Monitor
System fan status	Monitor
IP address of the system	Set and monitor
Subnet mask of the system	Set and monitor
Default gateway IP address	Set and monitor
SNMP name information	Set and monitor
SNMP location information	Set and monitor
SNMP contact information	Set and monitor
SNMP community names (up to 4)	Set and monitor
SNMP community access right (up to 4)	Set and monitor
SNMP trap host IP address (up to 3)	Set and monitor
Slot status: MC installed or not	Monitor
MC status: media type, speed, duplex	Monitor
MC link status of two ports	Monitor
Remote MC link status (two KC-300DMs link only)	Monitor

### **SNMP Traps**

Cold Start	System is powered on and completes initialization
Authentication failure	SNMP community authentication failure
Power status	The system power 1&2 failure and recovery
Fan failure	System fan failure and recovery
Slot # Port A link	Slot # MC Port A link down or up
Slot # Port B link	Slot # MC Port B link down or up
Slot # PTP link	Slot # Remote MC TP Port link change

### **Update Firmware**

Via TFTP protocol

### **Remote boot system**

## Chapter 2 Installation

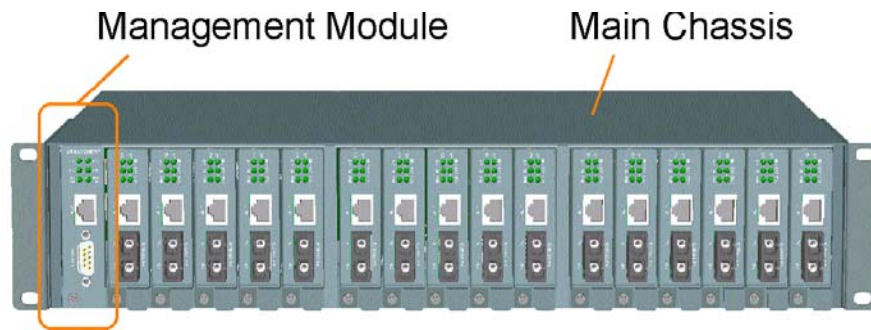
### 2.1 Unpacking

The product package contains:

- The system unit
- One power cord
- One 19-inch rack mounting kit
- Operation Manual

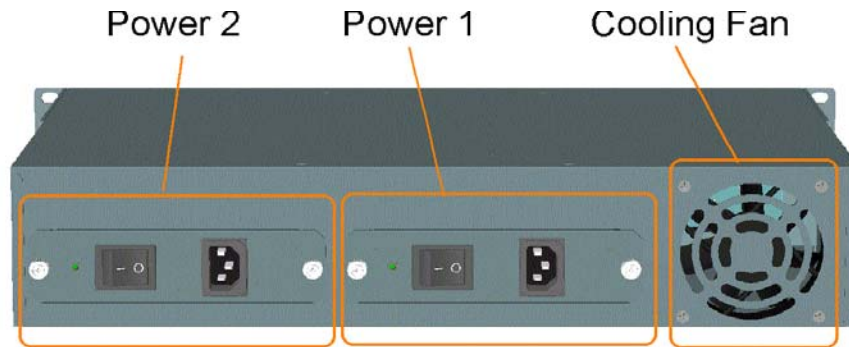
### 2.2 System Units

The figure below illustrates the front view of the MCC-16 system:



The type and numbers of the pre-installed media converters may be different depending on the model purchased. The figure shows a system fully installed with media converters.

The following figure shows the rear view of the MCC-16 chassis with two power slots on the rear panel. Each power slot can be installed with one AC power supply. Two slots provide the option for redundant power.



**Main Chassis:** provides insertion slots on front panel for CPU management module and optional add-on media converters. It also provides two chassis slots on rear for mounting power chassis modules.

**Management Module:** serves as a management agent to monitor system status and add-on converter modules for in-band and out-of-band management requests.

**AC Power Chassis:** provides power for the whole unit. It can receive commercial AC power.

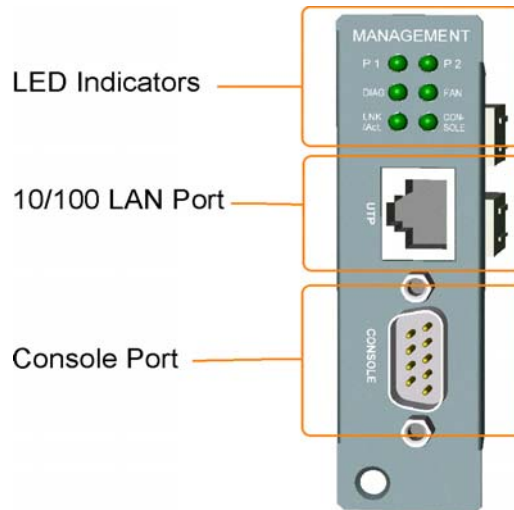
**System Cooling Fan:** provides forced air to cool down the temperature for the system unit.

## 2.2.2 Management Module

The chassis comes with one pre-installed Management module. The module facilitates the following functions:

- Direct out-of-band management via RS-232 console port
- SNMP agent to serve in-band management via SNMP protocol
- Telnet console in-band management via TCP/IP protocol
- HTTP host to serve web-based in-band management
- Monitoring all MCs status installed in the system
- Monitoring system power and fan status

See figure below for major components on the management module panel:



### Console Port

This port is a 9-pin male D-sub connector. It serves as an RS-232 DTE port. Refer to Chapter 4 for the console operation. The pin definitions are:

Pin 2	RXD
Pin 3	TXD
Pin 4	DTR
Pin 5	GND
Pin 6	DSR

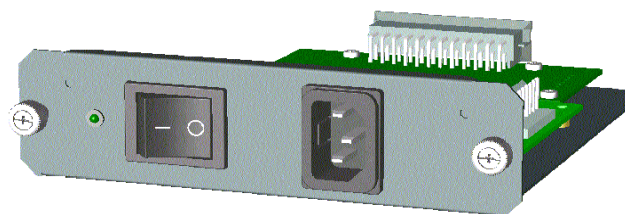
### UTP Port

This is an auto-negotiation 10/100BASE-TX LAN port and provides a shielded RJ-45 jack with MDI definition. This port must connect to your TCP/IP network for all in-band management operations.

<u>LED Indicators</u>	<u>Color</u>	<u>States</u>	<u>Interpretation</u>
P1	Green	On	Power 1 module is ON
P2	Green	On	Power 2 module is ON
DIAG	Green	On	CPU initialization
		Off	Initialization complete
FAN	Green	On	Fan failure detected
		Off	Fan in normal operation
CONSOLE	Green	On	Rx activities of console port
LNK/ACT	Green	On	LAN port link is active
	Green	Blink	Tx/Rx activities of UTP port

### 2.2.3 Power Chassis Modules

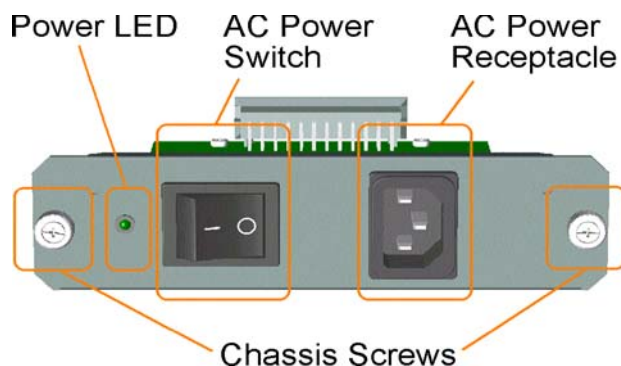
The system power supply is assembled in a plug-in chassis module as shown below:



Each power module is able to supply full power for system operation even when the chassis is fully loaded with media converters.

#### AC Power Chassis Specifications

AC power switch	System power on/off switch
AC power receptacle	IEC320 type receptacle
Input voltage range	90~264VAC
Input frequency	47 ~ 63Hz
Output power	60W
AC power cord	IEC320 type power cord
Power status display	Green LED



#### Power Module Removal

The power module is pre-installed in the chassis. The module is designed for easy removal for inspection or maintenance. However, a well-trained technician should only perform removal of the module.

For safety reasons before removing the power module, make sure:

- The power switch is turned off.
- The power cord is disconnected from the AC power receptacle.

To remove the module, unscrew fastener screws until they are released from the chassis. Hold the handle and pull the module out from the chassis smoothly. See the following example figure:



### Insertion of Power Module

Before inserting the power module into the chassis, make sure:

- The module power switch is turned off.
- The power cord is disconnected from the AC power receptacle.

To insert the power module, hold the handle and push it into the chassis until it is seated in the chassis properly. Screw the module securely in the chassis unit. See figure below:



The power module is designed to be hot plugged into or unplugged from the system even when another power module is installed in another power slot and in operation.

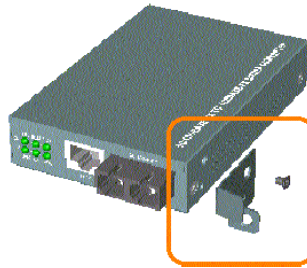
## 2.2.4 Media Converter Slots

The system chassis provides sixteen slots for installing optional slide-in MCs (media converters).

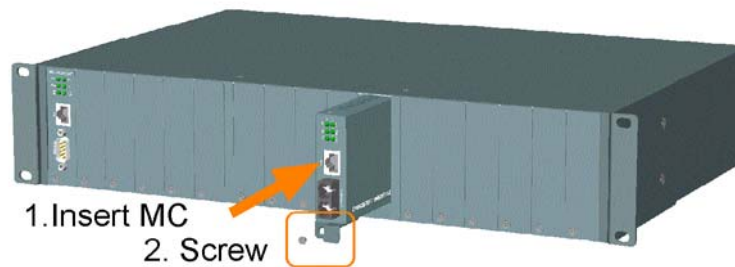
A media converter can be inserted into an available slot or removed from a slot anytime even when the system unit is powered on. This hot-plug design keeps all existing connections on the other slots running with no influence.

To insert an MC into a slot, the steps are:

1. Install a bracket, which is provided in the rack chassis package, onto the MC unit as shown below:

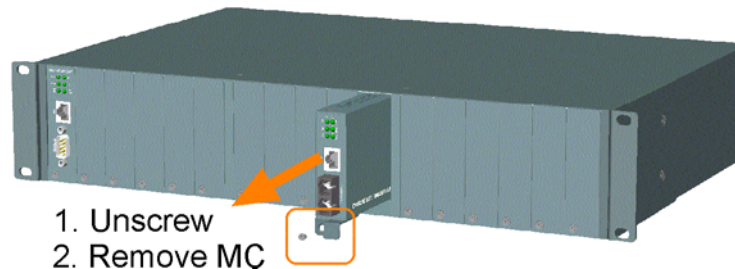


2. Remove the slot cover first and insert the MC slowly until it is seated in properly.
3. Screw the bracket onto system chassis securely before making any cable connection.



To remove an MC from slot, the steps are:

1. Disconnect all cable connections on the MC first.
2. Unscrew the MC bracket from system chassis.
3. Hold the bracket and pull it slowly out from the slot.

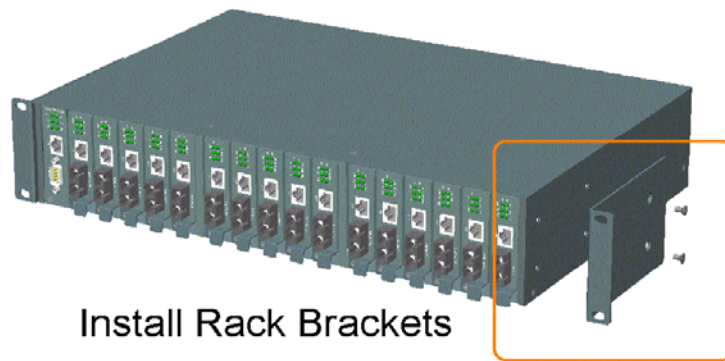


**NOTE:** The media converters are designed with hot-plug feature, which allows insertion and removal of the converters to be performed even when the system is in operation.

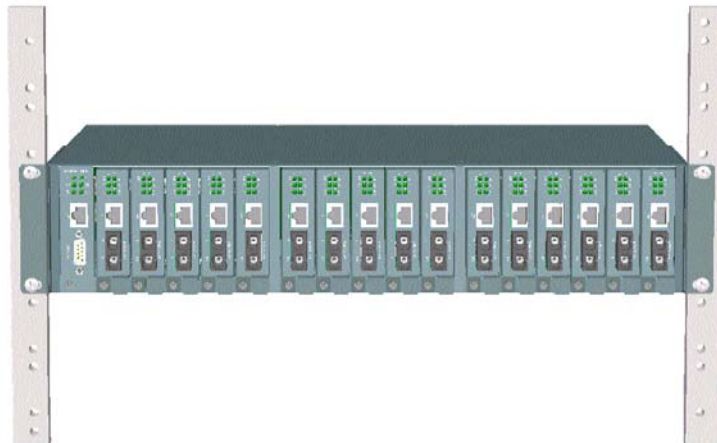
## 2.3 Rack Mounting

One rack mounting kit is supplied in the product package. It includes two rack mounting brackets and screws for installing the system unit into a 19-inch rack.

Mount both brackets onto the system unit as shown below:



Install the system unit into a 19-inch rack as shown below:





# Chapter 3

## Network Management

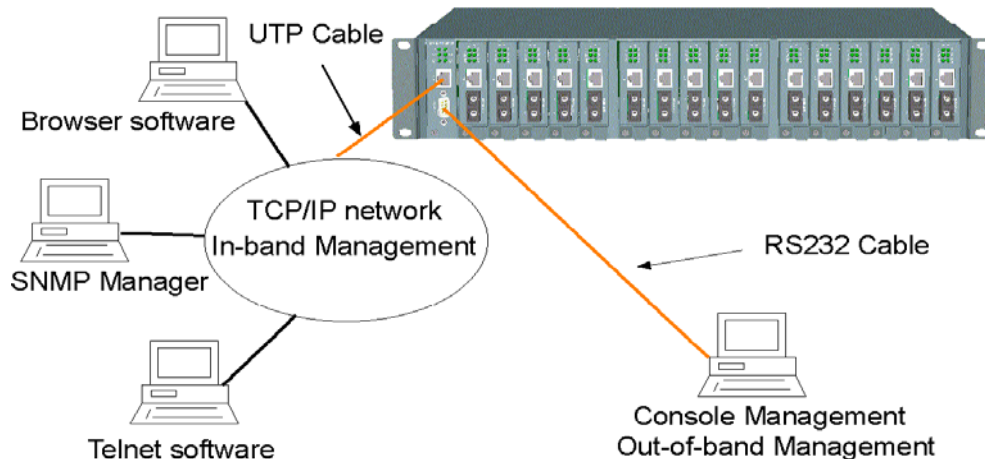
### 3.1 Management Functions

The managed converter rack system series is featured with management functions and can be managed by using the following methods:

- Direct console connection over an RS-232 cable
- Telnet software over TCP/IP network
- SNMP manager software over TCP/IP network
- Web browser software from Internet or Intranet over TCP/IP network

<u>Management Interface</u>	<u>RS-232 / Protocol</u>
Console operation	RS-232 console port
Console operation	Telnet over TCP/IP
SNMP management	SNMP over TCP/IP
Web browser	HTTP over TCP/IP

The following figure illustrates a management model diagram:



The system unit is equipped with one management module which serves as a management agent to monitor the system status and all installed media converter modules. The agent also responds to either in-band management requests coming from the network or out-of-band requests directly from a connected console.

### 3.2 Protocols Supported

<u>Protocols</u>	<u>Name</u>	<u>Reference</u>
IPv4	IP version4	RFC791
TCP	Transmission Control Protocol	RFC793
UDP	User Datagram Protocol	RFC768
ICMP	Internet Control Message Protocol	RFC792
SNMP	SNMP agent v1	RFC1157
MIB-II	Standard MIB	RFC1213
TFTP	Trivial File Transfer Protocol	RFC1350
TELNET	Telnet protocol	RFC854
HTTP	HTTP server for web management	RFC1945



### 3.3 Setup for Out-of-band (Console) Management

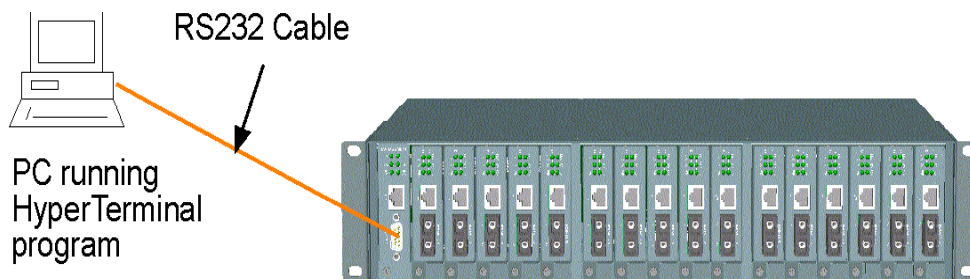
Before doing any in-band management, it is necessary to perform console operations for configuring IP and SNMP related settings for the first time the system is being installed. The console port is located on the SNMP module.

Any PC running Windows 95/98/XP/2000/2003 can be used as a console via the COM port. Windows Hyper Terminal program is an ideal, and the most popular, software for such console terminal operations.

To setup console operation, the steps are:

1. Find a proper RS-232 cable for the connection to a console terminal. If your are using a PC as a Terminal, make sure the cable pin assignments comply with the following:

Console port		9-pin PC COM port
Pin	2 RXD	3
	3 TXD	2
	4 DTR	6
	5 GND	5
	6 DSR	4



2. Connect one end to the console port and connect the other end to the PC COM port.
3. Configure your PC COM port setting to match the RS-232 settings of the console port and start your terminal software.

#### Factory default settings of the Console port

Baud rate: 38400, N, 8, 1, 0

Flow control: disabled

4. Turn the system power on.
5. Press <Enter> key several times in your terminal software until a login prompt comes up. It means the connection is proper.

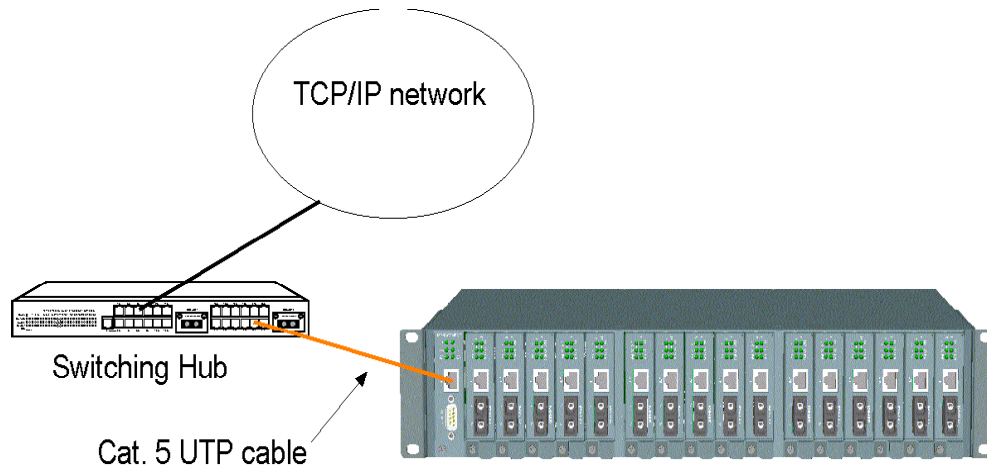
NOTE: The console port does not support a modem connection.

Refer to Chapter 4 for more information about Console management.

### 3.4 Setup for In-band Management

To perform an in-band management, it is necessary to connect the system to your TCP/IP network. The steps are:

1. Configure IP and SNMP related settings to the system using direct console management the first time the system is being installed.
2. Find a proper straight-through Category 5 UTP cable (maximal length 100 meters) for the connection.
3. Connect one end of the UTP cable to the UTP port on the SNMP module and connect the other end to the device, such as a switching hub, in your TCP/IP network.



4. Start your in-band management operations. For different management methods, refer to:
  - Chapter 4 for Telnet management
  - Chapter 5 for SNMP management
  - Chapter 6 for Web management

## Chapter 4

### Console and Telnet Operation

#### Functions supported:

- Set and display IP parameters for the system.
- Set and display SNMP parameters for the SNMP agent function.
- Monitor system power status, power temperature status, system fan status and other system information.
- Monitor installation status of each slot.
- Monitor the configuration and link status of each MC installed.
- Restore default settings for the system
- Change administrator password for access control.
- Update system software.
- Reboot (warm start) the system remotely.

#### Management Objects

	Modify	Monitor
Password for access control	Y	-
System: CPU, memory, flash, software version	-	Y
Power 1&2 status	-	Y
System fan status	-	Y
IP address of the system	Y	Y
Subnet mask of the system	Y	Y
Default gateway IP address	Y	Y
SNMP name	Y	Y
SNMP location	Y	Y
SNMP contact	Y	Y
SNMP community name (up to 4)	Y	Y
SNMP community access right (up to 4)	Y	Y
SNMP trap host IP address (up to 3)	Y	Y
Slot status: module installed or not	-	Y
MC status: media type, speed, duplex	-	Y
MC link status of two ports	-	Y
Remote MC TP link status *	-	Y

\* Remote MC TP link status monitoring is available only when an M727xS in the chassis is connected to a remote M727xS through a fiber link.

## Cold Start

When the power to the system is turned on, the system-start initialization and self-test process starts up. The self-test messages are displayed as follows if a console connection is established successfully:

### Power-on Self-test

```
-----  
$$$ System LOADER Checksum O.K !!!  
$$$ System IMAGE Checksum O.K !!!  
$$$ Sytem DATA Checksum O.K !!!  
$$ Waiting Copy Rom to Sdram  
$$$ System Power On Self Test....  
$$$ ARM Reg R/W Test Success !!!  
$$$ System EEPROM Checksum O.K !!  
$$$ Get parameter O.K !!  
My Mac Address is xxxxxxxxxxxx  
-----
```

This chapter describes the detailed console operation. It can be applied to either out-of-band console management or in-band Telnet management. Both are the same in operation starting from the login prompt.

### Direct Console Management

When you see the self-test messages shown on the screen properly, you can press <Enter> to start the console login operation. Go to the **Login Prompt** section below.

### Telnet Management

Use Telnet software to perform the management operation. The most convenient solution is using the built-in Telnet function in a Windows 95/98/ or NT PC. Enter into the DOS window and invoke the following Telnet command to connect to the system unit:

```
>telnet xxx.xxx.xxx.xxx
```

The specified xxx.xxx.xxx.xxx is the IP address of the system unit. A welcome message and login prompt are displayed if the connection is established properly.

### Login Prompt

The following figure illustrates the login screen:

```
-----  
Welcome to Console  
login:admin  
password:***  
-----
```

Username: admin

Factory default Password: 123

For security reason, the system supports a function to change the password in setup menu. It is recommended to change the default password immediately after a successful login.

When logged in successfully, a Setup menu is shown as follows:

```
-----  
Setup Menu  
TCP/IP stack for MCC-16 V1.xx  
[0] Print this menu  
[1] IP Menu  
[2] SNMP Menu  
[3] View System status  
[4] View Converter Slots Status  
[5] Restore Default Value  
[6] Security Manager  
[7] Update Firmware  
[8] Reboot System  
[9] Exit  
Please Select (0-9)....  
Enter Esc to abort....  
INET>  
-----
```

After prompt, type a number followed by [Enter] key for selecting an operation item to perform. See example below:

```
INET> n <Enter>
```

Select [0] to display the main menu again. [Esc] key can be used to abort the operation of any item and get back to the main menu.

The following sections describe the detailed operation of each item.

## 4.1 IP Menu

Select [1] from Setup menu to set IP related settings.

-----  
IP Menu

[0] Print this menu

[1] Set IP Address

[2] View IP Status

[3] Exit

Please Select (0-3)  
-----

### Set IP Address

-----

Enter ESC to abort.

Please Input IP Address(XXX.XXX.XXX.XXX): 192.168.0.23

replacing net[0] IP address nnn.nnn.nnn.nnn with 192.168.0.23

Please Input Subnet Mask(XXX.XXX.XXX.XXX): 255.255.255.0

replacing subnet mask[0] IP address nnn.nnn.nnn.nnn with 255.255.255.0

Please Input Gateway IP(XXX.XXX.XXX.XXX): 192.168.0.1

replacing gateway IP addr[0] nnn.nnn.nnn.nnn with 192.168.0.1

Do you want to Change IP setting ? (Y/N) Y

Please reboot system and use new IP to connection it !  
-----

**IP Address**      Unique IP address designated to this system

**Subnet Mask**    The subnet mask of the IP address specified above

**Gateway**        The IP address of the default gateway (router)

**Note:** All current in-band network management connections on the system will be lost if the system IP address is changed. This change does not affect the operation of the media converter modules in the slots.

### View IP Status

-----

IP Addr: 192.168.0.23 Submask: 255.255.255.0 Gateway: 192.168.0.1  
-----

## 4.2 SNMP Menu

Select [2] from Setup menu to perform SNMP related settings. The following figure illustrates the SNMP menu:

```
-----  
Snmp Menu  
[0] Print this menu  
[1] View Snmp Setting  
[2] Set Snmp Name  
[3] Set Snmp Location  
[4] Set Snmp Contact  
[5] Set Snmp Community  
[6] Set Snmp Trap Manager  
[7] Exit  
Please Select (0-7 )....  
INET>  
-----
```

SNMP related settings are:

<b>Name</b>	Login name for the system (127 characters).
<b>Location</b>	Location where the system is installed (127 characters).
<b>Contact</b>	Contact person regarding the system (127 characters).
<b>Community</b>	SNMP communities to which the system belongs and access rights to the system (R: read only, W: read/write). Maximum of four communities are supported.
<b>Trap manager</b>	IP address of the trap host to which a trap is issued and the trap community to which the system belongs. A maximum of three trap hosts are supported.

[Esc] key can be used to abort unfinished setting.

## 4.3 View System Status

Select [3] from Setup menu to view system status. The system status is shown as follows:

```
-----  
Power 1 Status: Good , Power 2 Status: Good  
FAN status: Good  
CPU status:  
Cpu Type = ARM7, Flash Size = 512K, Sdram Size = 2M Bytes  
Software version 1.xx  
-----
```

Power status indicates the status of power modules 1 and 2 in the chassis.

**Power Status: Good, Bad**

FAN status indicates the status of system cooling fan.

**FAN Status: Good, Bad**

CPU information and software version are static information for reference.

## 4.4 View Converter Slots Status

Select [4] from the setup menu for current status of MCs in the chassis. The slot status are shown as follows:

Slot	Port	Media	Speed	Duplex	Link	Slot	Port	Media	Speed	Duplex	Link	RTP
01	A	TX	100M	Full	Up	01	B	FX	100M	Full	Up	Up
02	A	TX	100M	Full	Up	02	B	FX	100M	Full	Up	Up
03	A	TX	100M	Full	Up	03	B	FX	100M	Full	Up	Up
04	A	TX	100M	Full	Up	04	B	FX	100M	Full	Up	Up
05	A	TX	100M	Full	Up	05	B	FX	100M	Full	Up	Up
06	A	TX	100M	Full	Up	06	B	FX	100M	Full	Up	N/A
07	A	TX	100M	Full	Up	07	B	FX	100M	Full	Up	N/A
08	A	TX	100M	Full	Up	08	B	FX	100M	Full	Up	N/A
09	A	TX	100M	Full	Up	09	B	FX	100M	Full	Up	N/A
10	A	TX	100M	Full	Up	10	B	FX	100M	Full	Up	N/A
11	A	TX	100M	Full	Up	11	B	FX	100M	Full	Up	N/A
12	A	TX	100M	Full	Up	12	B	FX	100M	Full	Up	-
13	A	TX	100M	Full	Up	13	B	FX	100M	Full	Up	-
14	A	TX	100M	Full	Up	14	B	FX	100M	Full	Up	-
15	A	TX	100M	Full	Up	15	B	FX	100M	Full	Up	-
16	A	TX	100M	Full	Up	16	B	FX	100M	Full	Up	-

The slot status definitions are:

<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	01-16	Slot position in the chassis Slot #1 - slot #16 are for MC
Port	N/A	No module is installed in slot
	A	Upper port of the module in slot
	B	Lower port of the module in slot
Media	N/A	No MC is installed in slot.
	TX	10BASE-T, 10/100BASE-TX port type
	FX	100BASE-FX port type
Speed	N/A	No MC is installed in slot
	10M	10Mbps
	100M	100Mbps
Duplex	N/A	No MC is installed in slot
	Full	Full duplex
	Half	Half duplex
Link	N/A	No MC is installed in slot
	Up	Link up
	Down	Link down
RTP *	N/A	Status not available
	Up	Remote MC TP link up
	----	MC in slot is not M727xS

- RTP: Remote MC TP link status monitoring is available only when M727xS in the chassis is connected to a remote M727xS through a fiber link.



## 4.5 Restore Default Values

Select [5] from Setup menu to restore factory default settings.

Factory default settings are:

<b>IP Address</b>	<b>192.168.0.2</b>
<b>Subnet Mask</b>	<b>255.255.255.0</b>
<b>Default Gateway</b>	<b>192.168.0.1</b>
<b>User Name</b>	<b>admin</b>
<b>Password</b>	<b>123</b>
<b>Name</b>	<b>(null)</b>
<b>Location</b>	<b>(null)</b>
<b>Contact</b>	<b>(null)</b>
<b>SNMPCommunities:</b>	
<b>No.1 Community name</b>	<b>public</b>
<b>No.1 Access right</b>	<b>Read only</b>
<b>No.2 Community name</b>	<b>(null)</b>
<b>No.2 Access right</b>	<b>(N/A)</b>
<b>No.3 Community name</b>	<b>(null)</b>
<b>No.3 Access right</b>	<b>(N/A)</b>
<b>No.4 Community name</b>	<b>(null)</b>
<b>No.4 Access right</b>	<b>(N/A)</b>
<b>SNMP Trap Managers:</b>	
<b>No.1 Trap manager IP</b>	<b>(null)</b>
<b>No.1 Community name</b>	<b>(null)</b>
<b>No.2 Trap manager IP</b>	<b>(null)</b>
<b>No.2 Community name</b>	<b>(null)</b>
<b>No.3 Trap manager IP</b>	<b>(null)</b>
<b>No.3 Community name</b>	<b>(null)</b>

## 4.6 Security Manager

Select [6] from Setup menu to change login user name and password.

The steps are:

### Display current user name

---

Current username: admin

Current password: \*\*\*\*\*

Press Esc to abort ....

---

### Change user name and password

---

Change username [admin]: **XXXXXX**

Enter password (1-8): **\*\*\*\*\***

Confirm password: **\*\*\*\*\***

Password updating .....

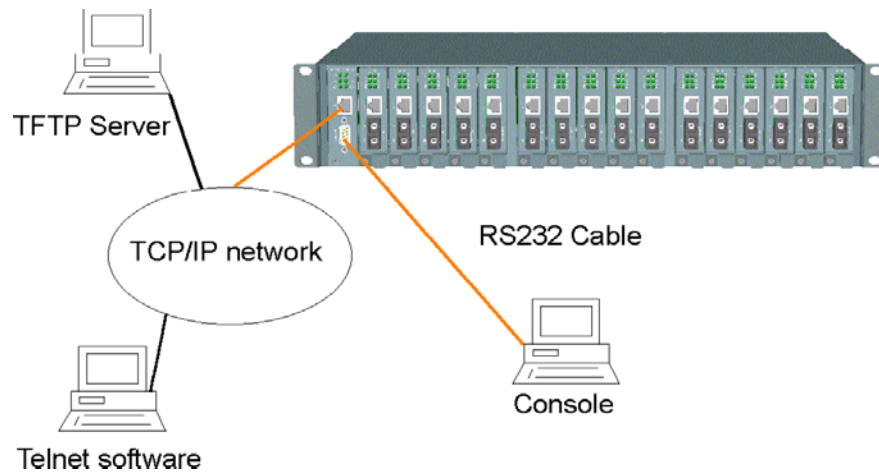
Password updated.

INET>

---

## 4.7 Update Firmware

Select [7] from Setup menu to perform firmware (system software) up- grade via TFTP protocol. Before doing TFTP operation, one TFTP server is required and installed in the network to where this system connects and new firmware file **image.bin** must be placed in the TFTP server.



The following information is required for TFTP operations:

**TFTP Server IP Address:** IP address of the TFTP server where the firmware image.bin is downloaded from.

The steps are:

**Specify TFTP server IP address**

Enter ESC to abort.

Please Input TFTP Server IP Address (xxx.xxx.xxx.xxx):192.168.0.88

TFTP Server: 192.168.0.88

**Confirm to start downloading**

Do you want to start download new image ? (Y/N) Y

Download image and please wait.....

**Confirm to update system flash memory**

Download new image complete, do you want to update flash ? (Y/N) Y

Update flash and please wait ....

Update flash complete and please reboot system !

INET>

## 4.8 Reboot System

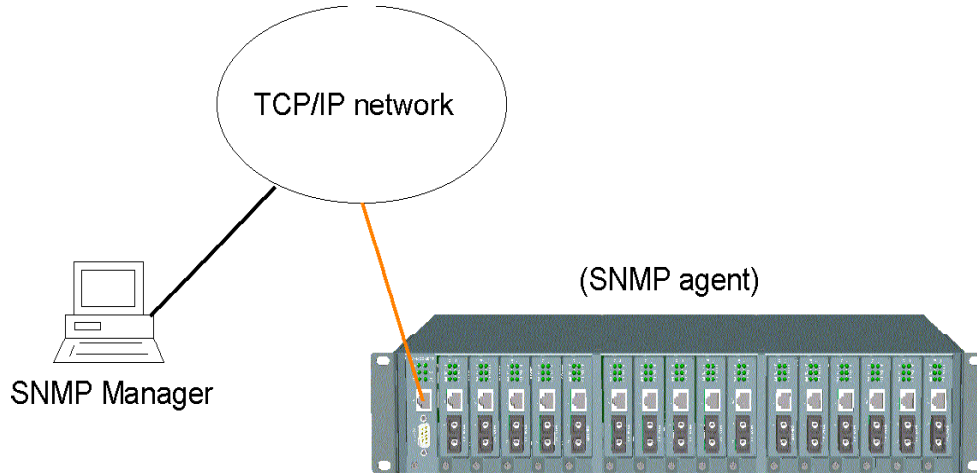
Select [8] from Setup menu to reboot the system. This reboot function allows you to perform a warm start to the system.

**Do you want to reboot system? (Y/N) Y**

## Chapter 5

# SNMP Management

SNMP management is performed at a network management station running SNMP network management application manager software with graphical user interface. The following figure illustrates an example model:



The system unit serves as an SNMP agent and provides the capabilities that allows network administrators via SNMP protocol to set parameters and view system status and media converter status defined in the standard MIB-II and private MIB.

### 5.1 Configuring SNMP Settings via Console Operation

Before performing SNMP operation, proper SNMP settings must be configured in the system unit. The SNMP related settings are:

<b>Name</b>	Login name to identify a specific system unit
<b>Location</b>	Location where the system is installed
<b>Contact</b>	Contact person regarding the system
<b>Community</b>	SNMP communities to which the system belongs and access rights to the system (read only or read/write)
<b>Trap hosts</b>	IP addresses of trap hosts to which a trap is issued and the trap community to which the system belongs

Up to four SNMP communities and up to three trap hosts are supported by the system SNMP agent.

These settings can be configured through console or telnet operation. Refer to Chapter 4 for more information.

## 5.2 SNMP Private MIB

Use the SNMP management application software to compile the MIB file first before performing any management operation. In addition to standard MIB-II (RFC1213), the system supports private MIB as below:

<b><u>Private MIB Objects</u></b>	<b><u>Get</u></b>	<b><u>Remark</u></b>
ssPowerStatus(kti.30.1.1)	Y	Power 1&2 status
ssFanStatus(kti.30.1.2)	Y	System fan status
cputype(kti.30.2.1)	Y	ARM7
flashrom(kti.30.2.2)	Y	512KB
memsize(kti.30.2.3)	Y	2MB
softwarever(kti.30.2.4)	Y	1.xx
mibFileVer(kti.30.2.5)	Y	1.xx
portNumber(kti.30.3.1)	Y	Total number of slots
portTable(kti.30.3.2)	-	
portEntry(1)	-	
slotIndex(1)	Y	Slot ID 1 – 16
slotIndexDescription(2)	Y	Slot1 - Slot16
slotModuleDescription(3)	Y	
slotModuleType(4)	Y	
sotModuleStatus_PortA_Media(5)	Y	Port A media type
slotModuleStatus_PortA_LineSpeed(6)	Y	Port A line Speed
slotModuleStatus_PortA_Duplex(7)	Y	Port A duplex mode
slotModuleStatus_PortA_LinkStatus(8)	Y	Port A Link status
slotModuleStatus_PortB_Media(9)	Y	Port B media type
slotModuleStatus_PortB_LineSpeed(10)	Y	Port B line speed
slotModuleStatus_PortB_Duplex(11)	Y	Port B duplex mode
slotModuleStatus_PortB_LinkStatus(12)	Y	Port B link status
slotModuleStatus_RTP_LinkStatus(13) *	Y	Remote MC link status

\* RTP\_LinkStatus : TP port link status of the connected remote MC

Note: Port A is the upper port of the MC; Port B is the lower port of the MC

Refer to MIB file, KC1300-Vx.xx.mib for the details. This file can be used for MIB compiler.

### 5.3 SNMP Traps

The system also supports the following SNMP traps. When the trap event occurs, the SNMP agent will generate a trap notification to the SNMP management station.

<b><u>Trap Name</u></b>	<b><u>Event of Trap Generated</u></b>
Cold Start	The system is powered on and complete initialization
Authentication failure	SNMP community authentication failure
Power status	Any power failure of Power1 and Power2
Power status	Any power recovery of Power1 and Power2
Fan status	Fan failure
Fan status	Fan recovery
Slot # Port A link	Slot # MC Port A link down or up
Slot # Port A link	Slot # MC Port A link recovery
Slot # Port B link	Slot # MC Port B link down or up
Slot # Port B link	Slot # MC Port B link recovery
Slot # RTP link	Slot # remote MC TP link change

The binding information together with a trap is:

<b><u>Trap Name</u></b>	<b><u>VarBind</u></b>
Cold Start	sysDescr, ie KC-1300
Authentication failure	sysDescr, ie, KC-1300
Power Status	Power status for Power1 and Power2
Fan Status	Fan status
Slot # Port A link	Slot description and Port A link status
Slot # Port B link	Slot description and Port B link status
Slot # RTP link	Slot description and remote MC TP link status

Remark:

1. The slot # can be slot 1 up to slot 16.
2. Port A: the upper port of the MC installed in slot.
3. Port B: the lower port of the MC installed in slot.

## **Chapter 6**

### **Web Management**

The system features an http server for serving management requests coming from any web browser software over the internet or intranet network.

#### **Web Browser**

Compatible web browser software with JAVA support

Microsoft Internet Explorer 4.0 or later

Netscape Communicator 4.x or later

#### **Set IP Address for the System Unit**

Before the system can be managed from a web browser software, make sure a unique IP address is configured to the system. Refer to Chapter 4 for how to set IP address.

### **6.1 Starting Browser Software and Making Connection**

Start your browser software and enter the IP address of the system unit to which you want to connect. The IP address is used as a URL for the browser software to search the device.

URL: `http://xxx.xxx.xxx.xxx/`

Factory default IP address: 192.168.0.2

## 6.2 Login to the System Unit

When browser software connects to the system unit successfully, a Login screen is provided for you to login to the device as follows:



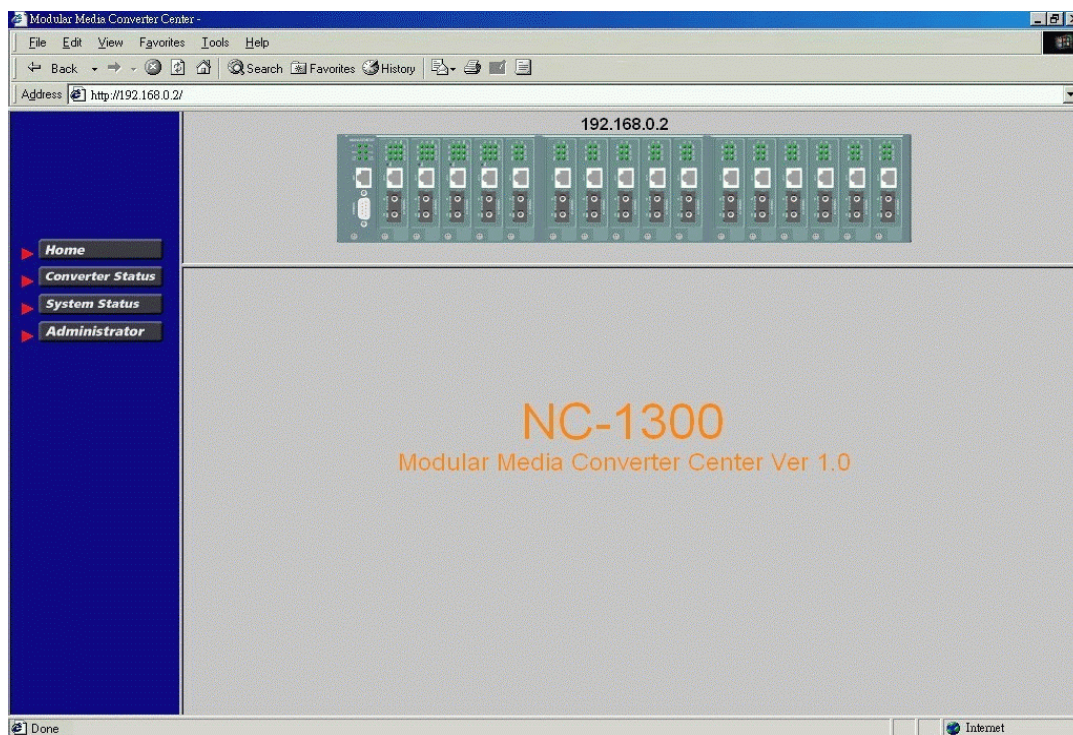
A dialog box titled "Enter Network Password" with a question mark icon. It contains the text "Please type your user name and password." Below this, it shows "Site: 192.168.0.27" and "Realm: index.htm". There are two input fields: "User Name" and "Password". At the bottom, there is a checkbox labeled "Save this password in your password list" and two buttons: "OK" and "Cancel".

### Login

Username: Admin

Factory default Password: 123

The following screen is displayed when a successful login is performed.

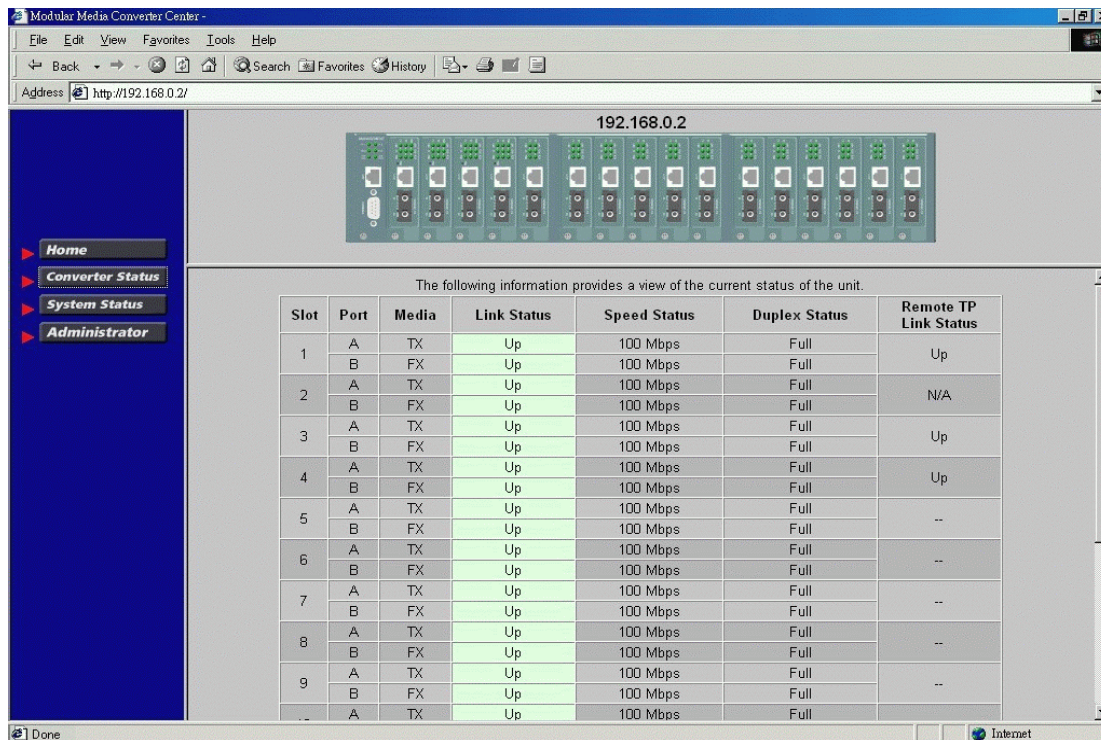


In addition to the device image, the screen supports the following functions on the right side:

1. Home: home page and device image
2. Converter Status: view all slot status
3. System Status: view system related status
4. Administrator: other management functions



## 6.3 Converter Status



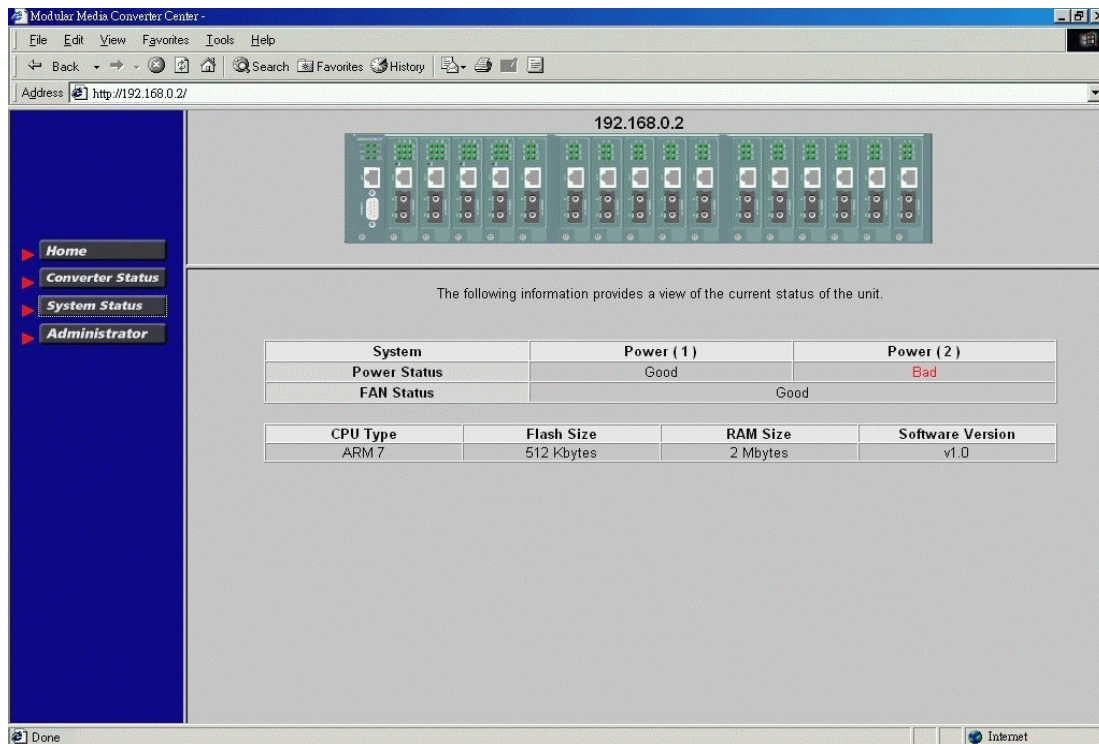
Click [**Converter Status**] to view all slot status in a table format.

The information includes:

<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	01-16	Slot position in the system Slot #1 - slot #16 are for MC installation
Port	A B	Upper port of the module in the slot Lower port of the module in the slot
Media	TX FX	Twisted-pair port type Optic fiber port type
Link	Green Red	Link up Link down
Speed	10Mbps 100Mbps 1000Mbps	10BASE-T or 10BASE-FL 100BASE-TX or 100BASE-FX 1000BASE-T or 1000BASE-SX/LX
Duplex	Full Half	Full duplex Half duplex
RTP link	Green Red	Remote MC TP link up * Remote MC TP link status not available

\* RTP: Remote MC TP link status monitoring is available only when M727XS in the rack is connected to a remote M727XS through a fiber link.

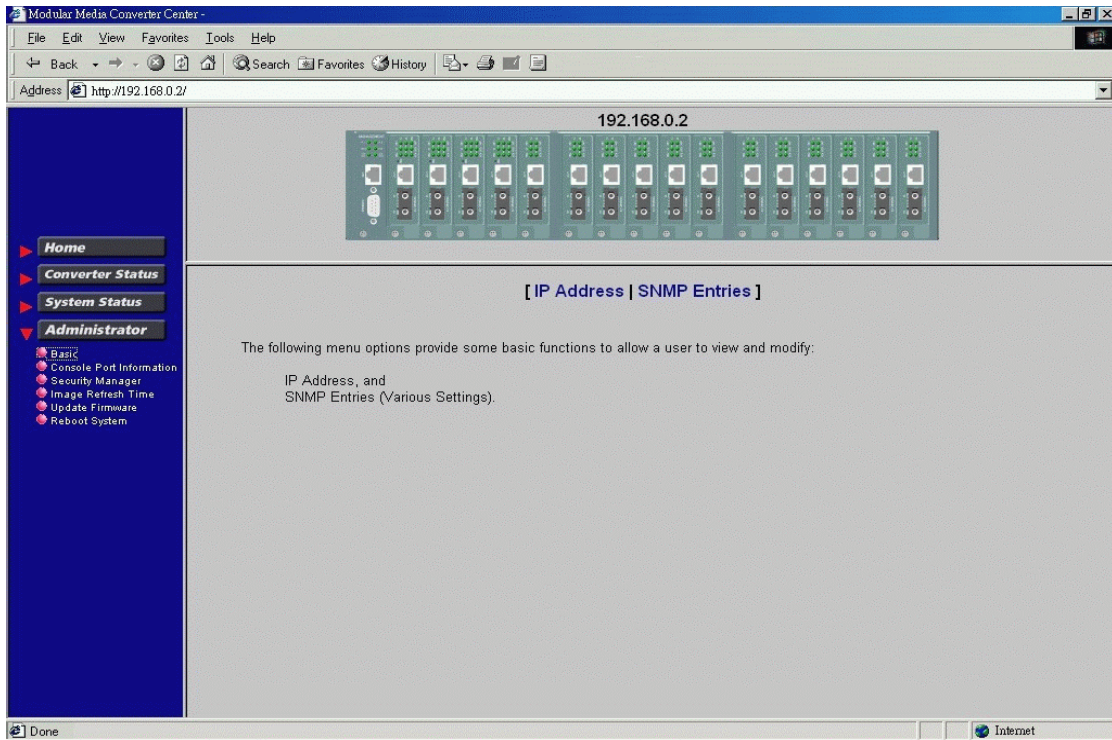
## 6.4 System Status



Click [System Status] to view system related status in a table format. The information includes:

<b>Power Status</b>	: System power 1&2 chassis condition
<b>FAN Status</b>	: System fan status
<b>CPU type</b>	: CPU model equipped in management module
<b>RAM size</b>	: Memory size equipped in management module
<b>Flash size</b>	: Flash memory equipped in management module
<b>Software version</b>	: Software version built in management module

## 6.5 Administrator Menu



Click [**Administrator**] to show administrator menu. The menu includes the following options:

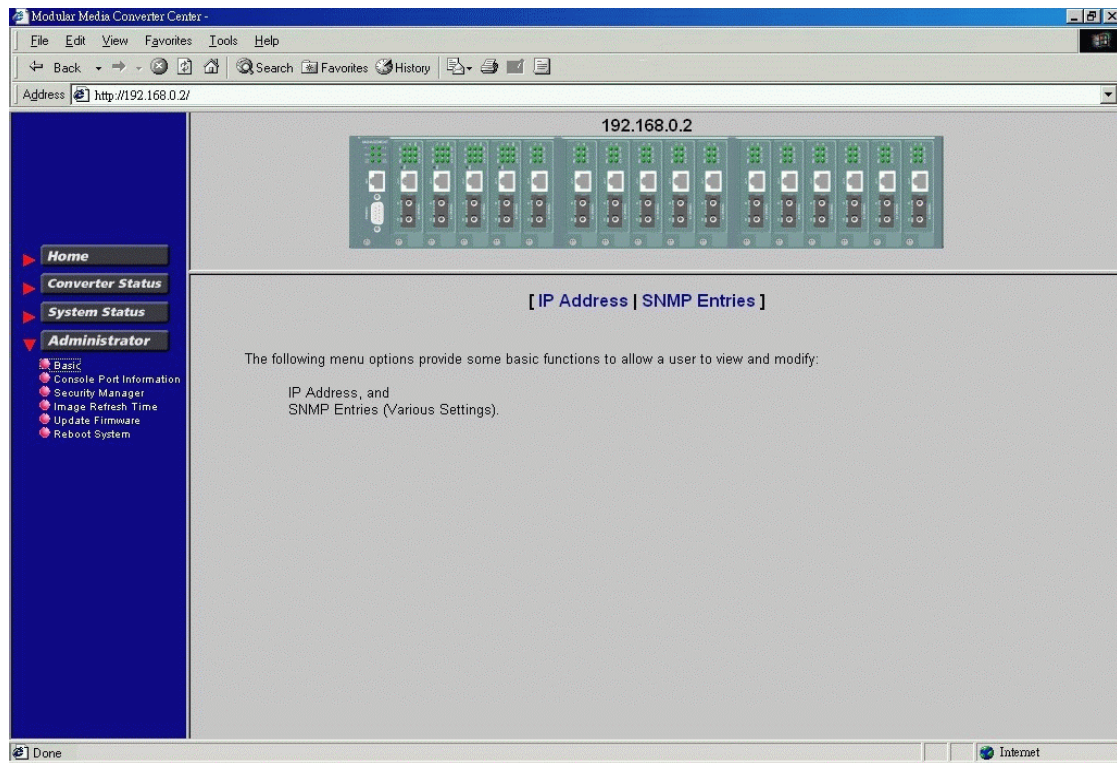
1. Basic: Set / View IP and SNMP related settings
2. Console Port Information: View RS-232 console configuration
3. Security Manager: Change login user name and password
4. Image Refresh Time: Set refresh time interval of the image
5. Update Firmware: Update the software built in SNMP module
6. Reboot System: Reboot the system remotely

Refer to the following sections for the details.



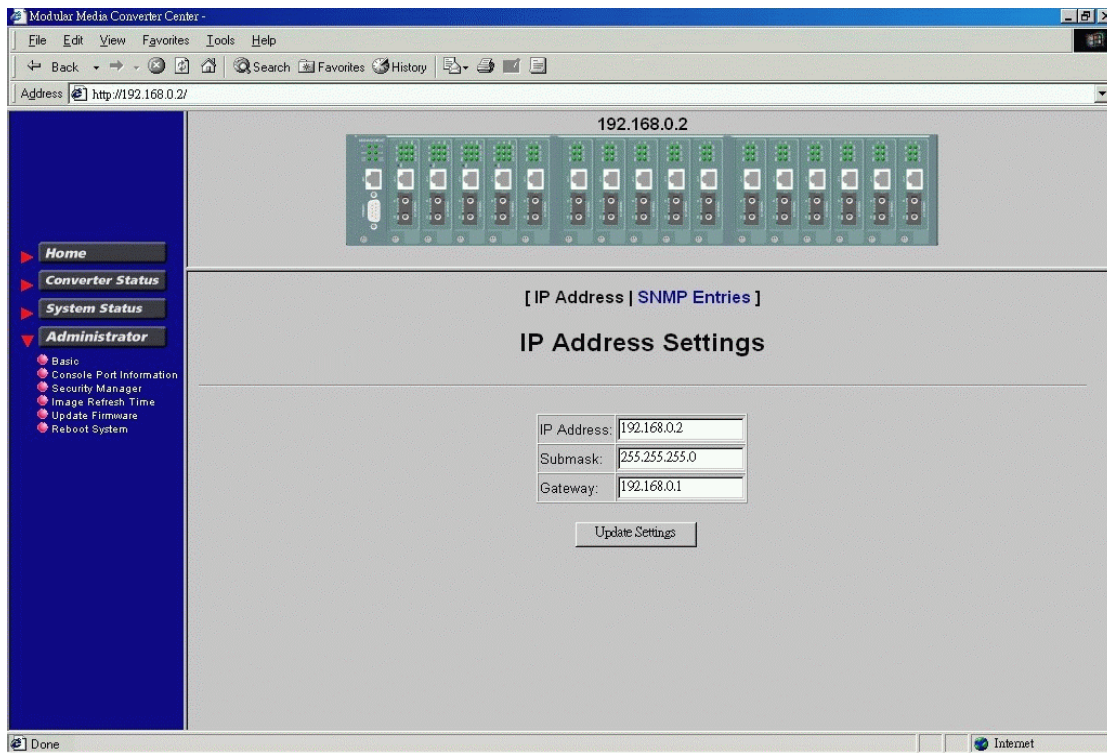
## 6.5.1 Basic

Click [Basic] to perform IP setting and SNMP settings.



IP setting and SNMP setting are described in the following sections respectively.

Click [**IP Address**] button to set IP settings.

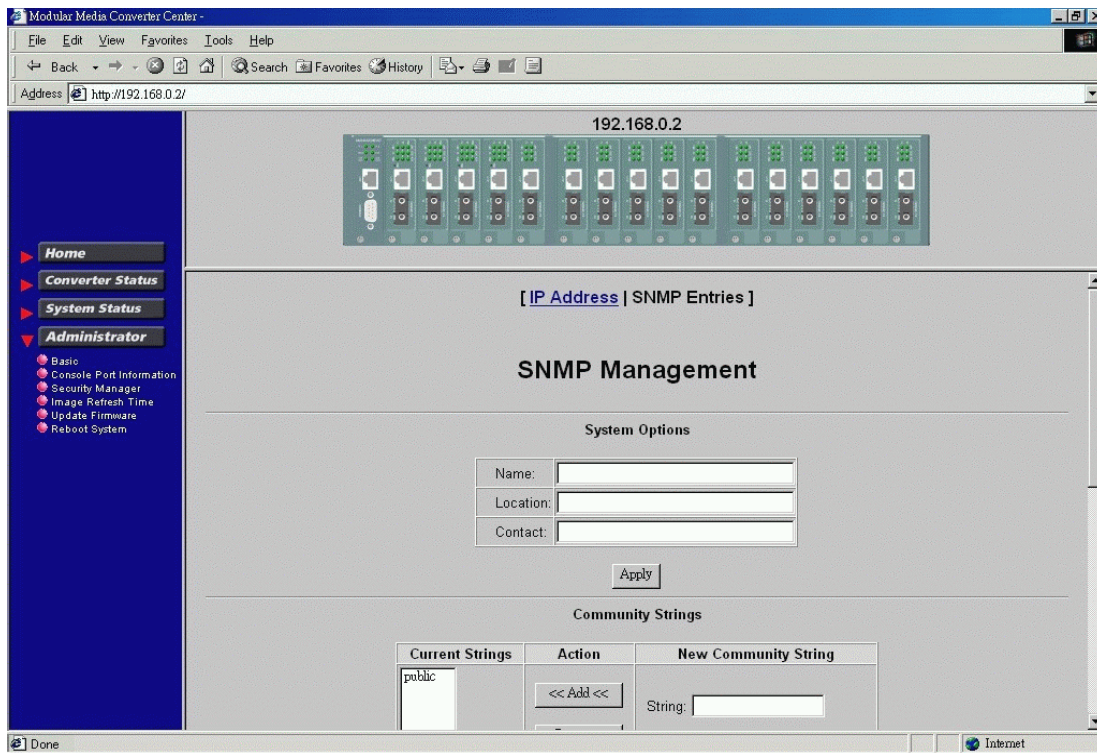


IP settings include:

<b>IP Address</b>	: Unique IP address designated to this system
<b>Subnet Mask</b>	: The subnet mask of the IP address specified above
<b>Gateway</b>	: The IP address of the default gateway (router)

Click [**Update Settings**] to make new settings effective. However, a new IP address change will make your current connection invalid. Restart your web link with new IP address to connect the system.

Click [SNMP Entries] button to set SNMP settings.



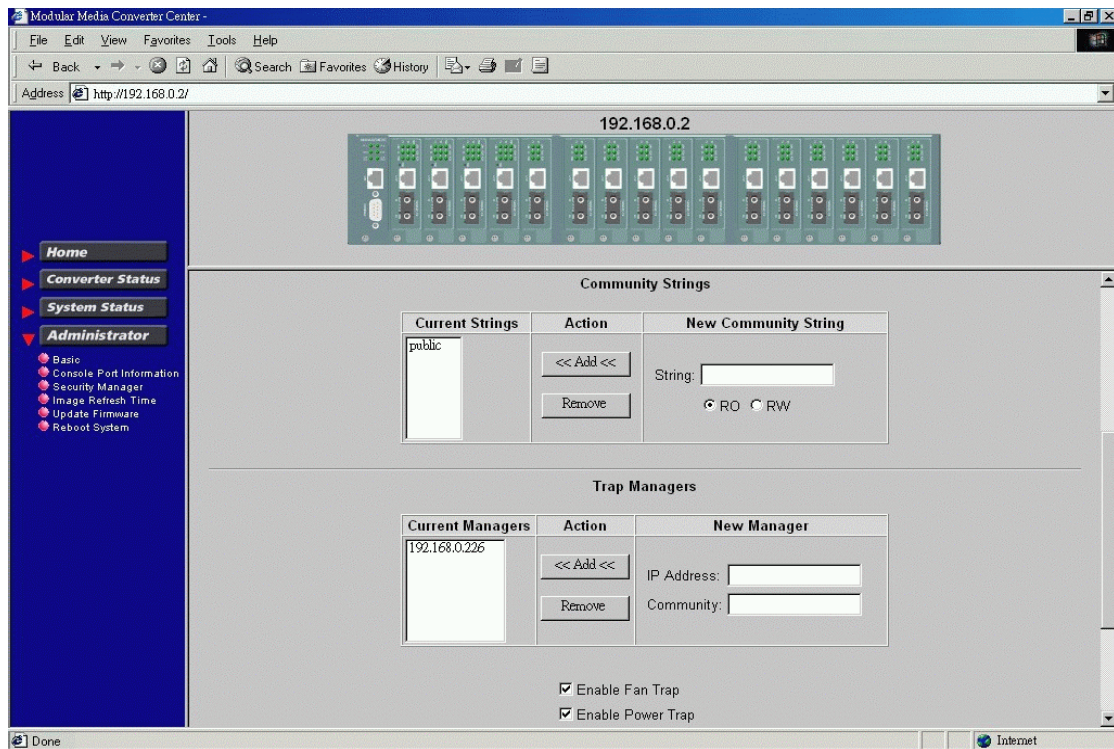
### SNMP Entries - System options

SNMP related settings are:

**Name** : Login name for the system  
**Location** : Location where the system is installed  
**Contact** : Contact person regarding the system  
**[Apply]** : Click button to make the settings effective



## SNMP Entries - Community Strings



One community contains two settings:

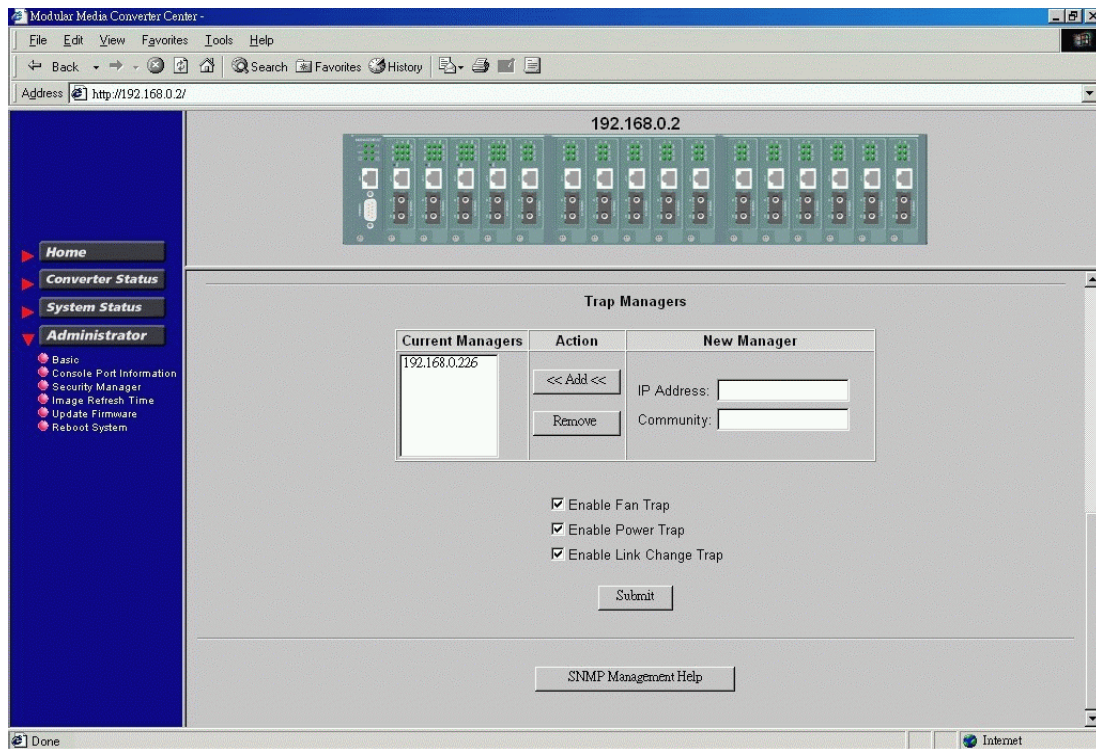
**Community name** : SNMP communities to which the system belongs  
**Access right** : Access rights associated with the community name

Click [**Add**] button to add one new community into the community list.

Click [**Remove**] button to remove one community from the community list.

Up to four entries are supported in the community list.

## SNMP Entries - Trap Managers



One Trap Manager contains two settings:

**IP Address** : IP address of the trap host to which a trap is issued

**Community** : The trap community to which the system belongs

**Enable Fan Trap** : Enable trap for fan failure events

**Enable Power Trap** : Enable trap for power failure events

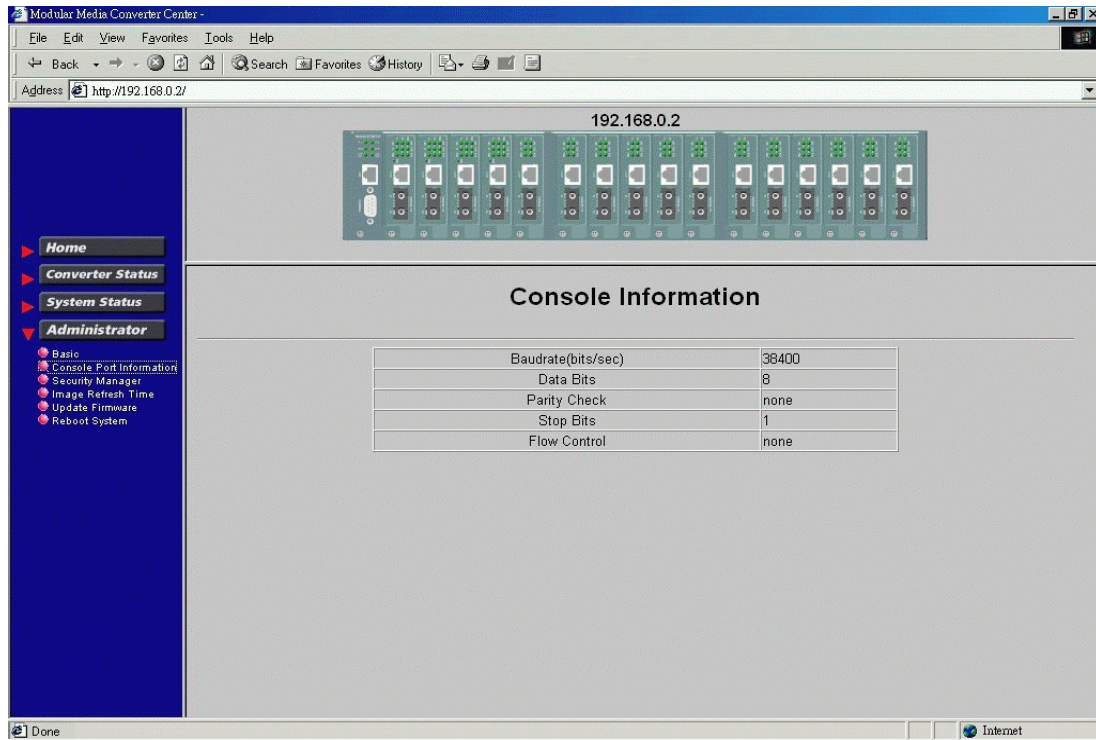
**Enable Link Change Trap** : Enable trap for any link change events

Click [Add] to add one trap manager into the manager list.

Click [Remove] to remove one trap manager from the manager list.

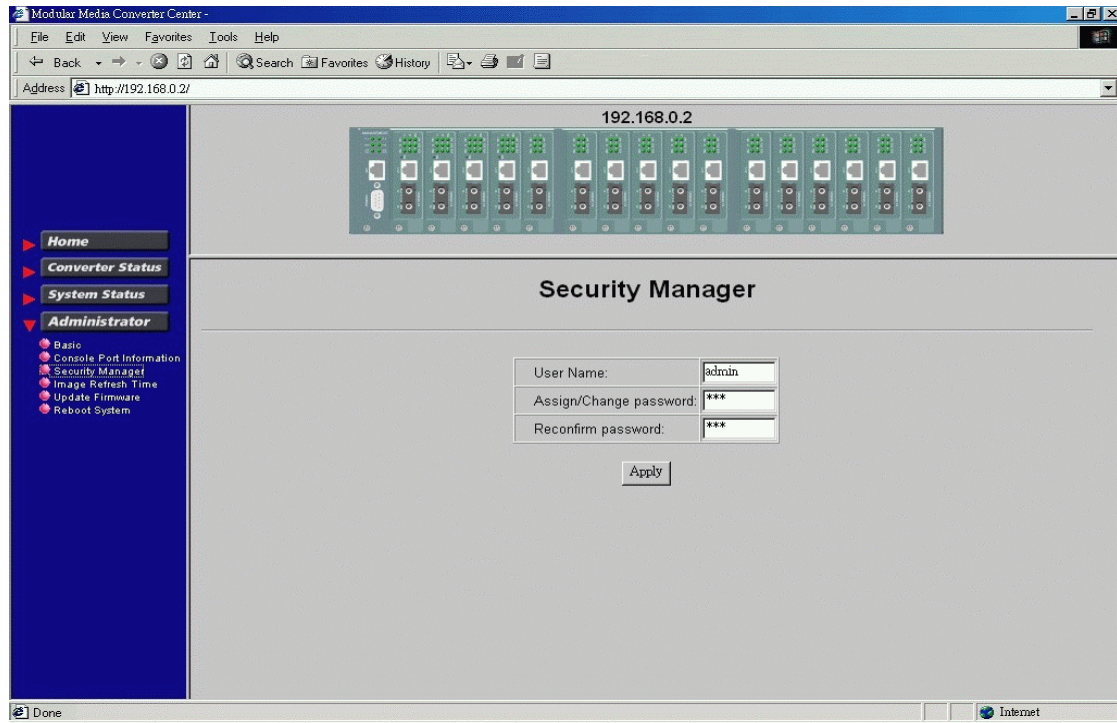


## 6.5.2 Console Port Information



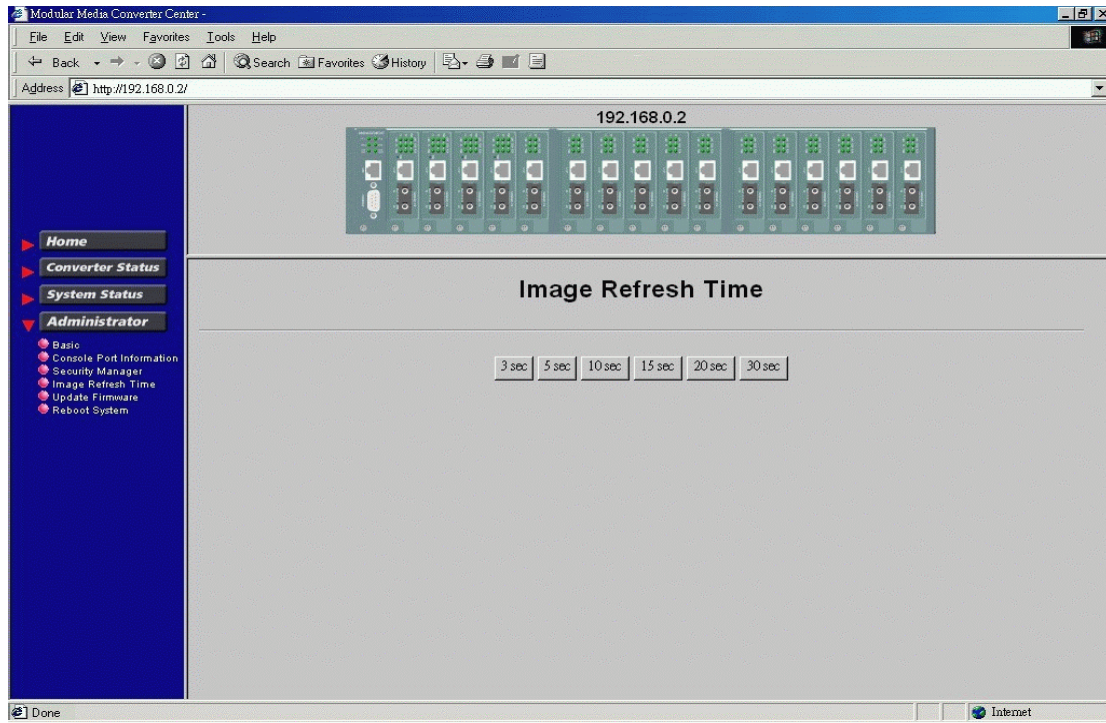
This screen displays the configuration of the RS-232 console port.

## 6.5.3 Security Manager



Security Manager allows you to change login user name and password. Click [**Apply**] to make the changes effective.

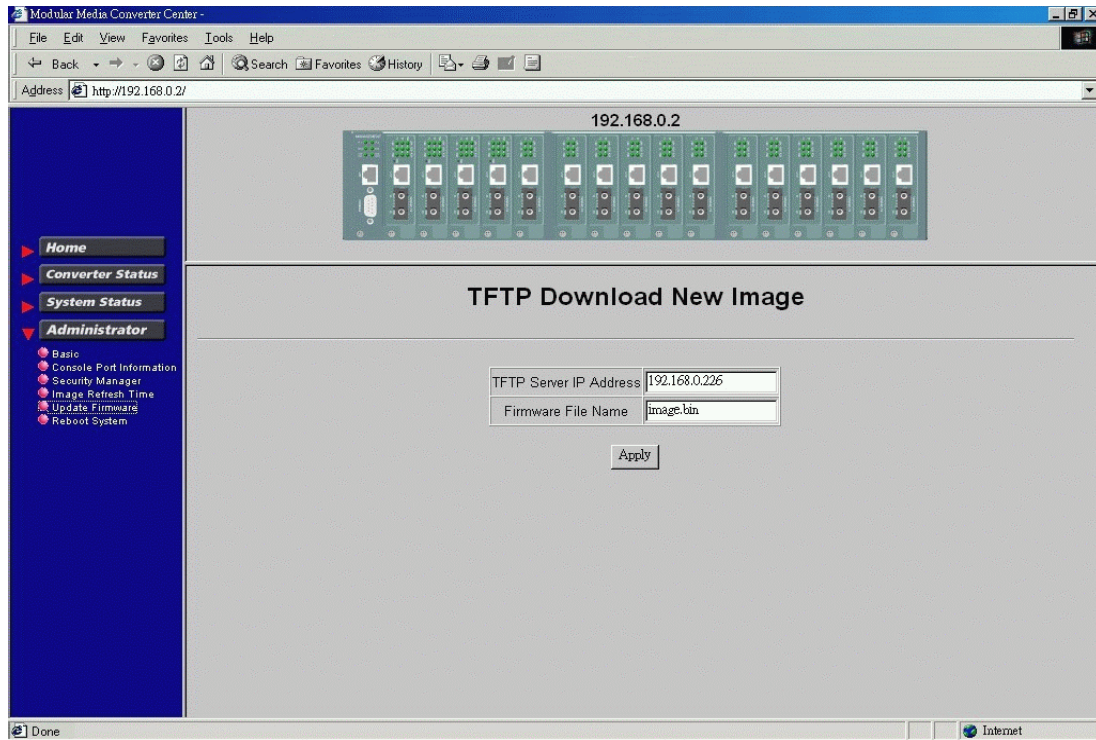
## 6.5.4 Image Refresh Time



The system image is updated periodically to present the latest status. The default time interval of refreshing the image is 20 seconds. It can be changed by clicking any of the time buttons displayed. This is a run time setting and not a permanent setting.



## 6.5.5 Update Firmware

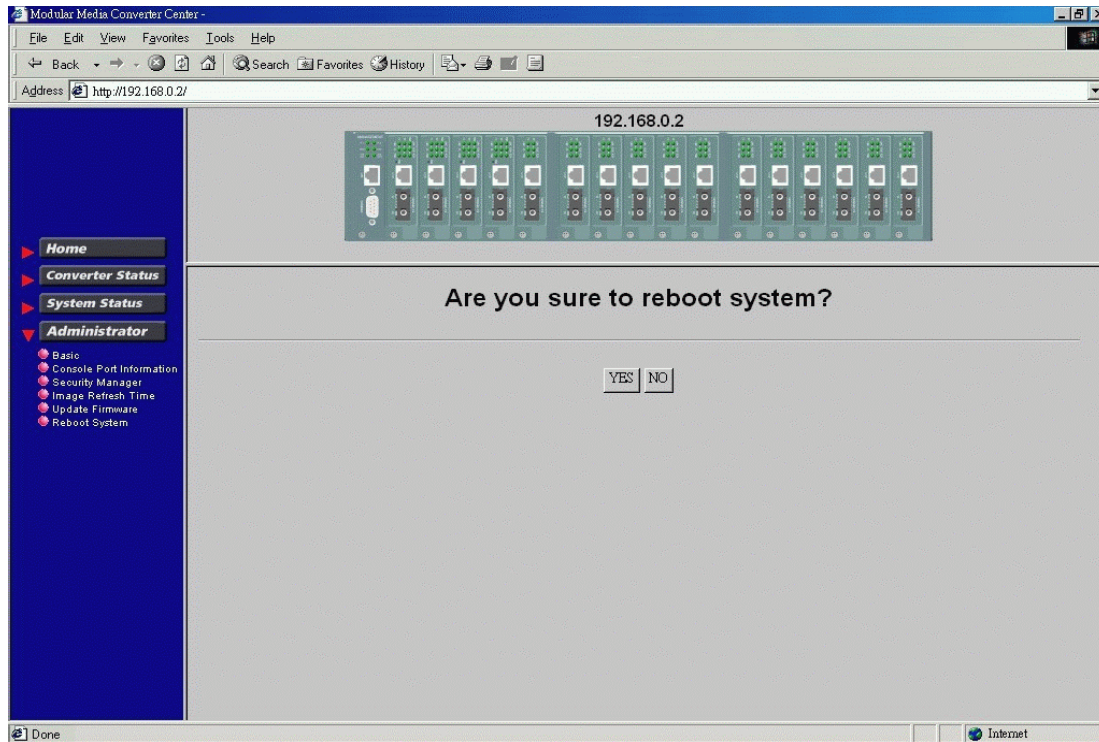


[**Update Firmware**] allows you to perform firmware (system software) upgrade via TFTP protocol. Before doing TFTP operation, one TFTP server is required and installed in the network to where this system connects and the new firmware file **image.bin** must be placed in the TFTP server.

Set IP address for the TFTP server from where the firmware image is to be downloaded. Specify the file name as Image.bin.

Click [**Apply**] to start the file transfer operation.

## 6.5.6 Reboot System

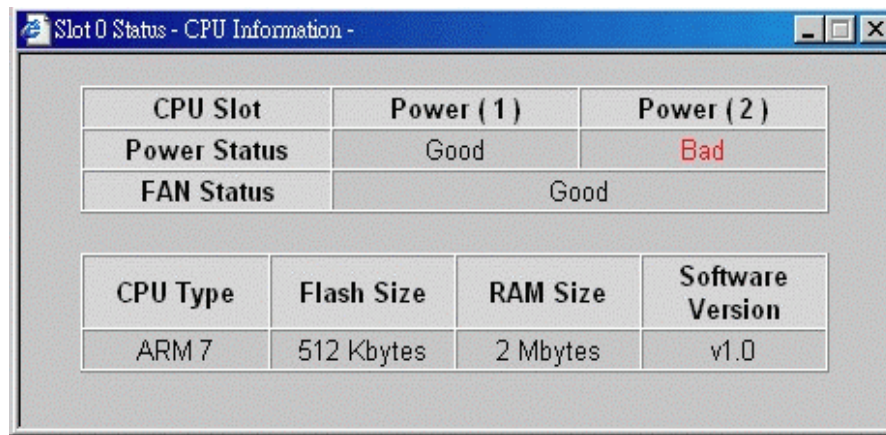


[**Reboot System**] allows you to reboot the system unit remotely. Starting this command will make your current http connection lost. You must rebuild the connection to perform any management operations to the unit.

## 6.6 Slot Icon Operations

In addition to the menu supported, you may click the following image icons to show specific status.

Click slot 0 on the system image shown on the screen



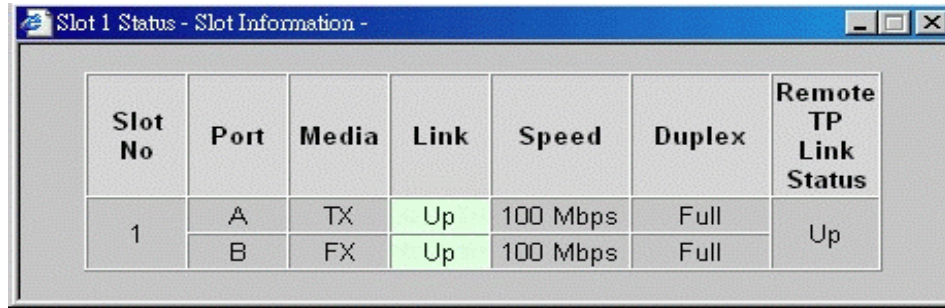
CPU Slot	Power ( 1 )	Power ( 2 )
Power Status	Good	Bad
FAN Status	Good	

CPU Type	Flash Size	RAM Size	Software Version
ARM 7	512 Kbytes	2 Mbytes	v1.0

<b>Power Status</b>	: System power 1&2 condition
<b>Fan Status</b>	: System fan status
<b>CPU type</b>	: CPU model equipped in management module
<b>RAM size</b>	: Memory size equipped in management module
<b>Flash size</b>	: Flash memory equipped in management module
<b>Software version</b>	: Software version built in management module

Click any one slot in slot 1 to slot 18 to view one specific slot status. The following figure illustrates slot 9 status:



Slot No	Port	Media	Link	Speed	Duplex	Remote TP Link Status
1	A	TX	Up	100 Mbps	Full	Up
	B	FX	Up	100 Mbps	Full	

<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	1-16	Slot position in the system Slot #1 - slot #16 are for MC
Port	A B	Upper port of the MC in the slot Lower port of the MC in the slot
Media	TX FX	Twisted-pair port type Optic fiber port type
Link	Green Red	Up - Link up Down - Link down
Speed	10Mbps 100Mbps 1000Mbps	10BASE-T or 10BASE-FL 100BASE-TX or 100BASE-FX 1000BASE-T or 1000BASE-SX/LX
Duplex	Full Half	Full duplex Half duplex
RTP Link	Green Red	Up - Remote MC TP link up N/A - Remote MC TP link status not available

\* RTP Link: Remote MC TP link status monitoring is available only when M727XS in the rack is connected to a remote M727XS through fiber link.